

## **IN THE ABSTRACT**

Please amend the Abstract of the Disclosure as follows:

### **Abstract of the Disclosure**

An optical signal performance monitoring apparatus in a multi-channel optical transmission system and a method for monitoring the optical signal performance. ~~are provided.~~  
~~To achieve the above objective, the~~The optical signal performance monitoring apparatus in the multi-channel optical transmission system includes an optical input unit for controlling the spot size of an inputted multi-channel optical signal and generating a 1<sup>st</sup> multi-channel beam; a diffraction and reflection unit for diffracting and reflecting the 1<sup>st</sup> multi-channel beam; and generating a 2<sup>nd</sup> multi-channel beam which is divided by wavelength and is in parallel with the 1<sup>st</sup> multi-channel beam; an optical collimation and concentration unit for collimating the 1<sup>st</sup> multi-channel beam and concentrating the 2<sup>nd</sup> multi-channel beam which is divided by wavelength; and an optical detection unit for measuring the intensity of the 2<sup>nd</sup> multi-channel beam focused by wavelength, and measuring the optical signal-to-noise ratio by measuring the optical intensity corresponding to each wavelength and an amplified spontaneous emission (ASE) noise strength at a point between optical signals.

~~; an optical input unit for controlling the spot size of an inputted multi-channel optical signal and generating the 1<sup>st</sup> multi-channel beam; an optical collimation and focusing unit for collimating the 1<sup>st</sup> multi-channel beam and focusing the 2<sup>nd</sup> multi-channel beam which is divided by wavelength; a diffraction and reflection unit for diffracting and reflecting the 1<sup>st</sup> collimated multi-channel beam, and generating the 2<sup>nd</sup> multi-channel beam which is divided by~~

wavelength and is in parallel with the 1<sup>st</sup> collimated multi-channel beam; an optical detection unit for measuring the intensity of the 2<sup>nd</sup> multi-channel beam by wavelength, which is focused by wavelength by the optical collimation and focusing unit. The optical signal performance monitoring apparatus can measure the intensity, the wavelength and the optical signal to noise ratio of the multi-channel optical signal by channel simultaneously in real time. In addition, since the optical signal performance monitoring can minimize the impact caused by an aberration and maintain the same f-number in the optical system, a high resolving power and a high dynamic range are guaranteed.